COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
South Central Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Transcontinental Gas Pipe Line Corporation
State Route 691 SW - Appomattox County, Virginia
Permit No. SCRO30863

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Transcontinental Gas Pipe Line Corporation has applied for a Title V Operating Permit for its Compressor Station No. 170 facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:_____ Date: January 8, 2004

Air Permit Manager:_____ Date: January 8, 2004

Regional Director:_____ Date: January 9, 2004

FACILITY INFORMATION

Permittee
Transcontinental Gas Pipe Line Corporation
P. O. Box 1396
Houston, Texas 77251-1396

Facility
Transcontinental Gas Pipe Line Corporation
Compressor Station No. 170
State Route 691 SW
Appomattox, Appomattox County, Virginia 24522-9998
AIRS ID No. 51-011-0011

SOURCE DESCRIPTION

SIC Code 4922 - Transcontinental Gas Pipe Line Corporation (Transco) is an interstate natural gas transmission company. Transco's compressor stations are used to compress and move the gas along the system. Compression is made possible through the application of natural gas-fired, internal combustion, reciprocating compressor engines. The facility is a Title V major source of NOx, CO, VOC, and hazardous air pollutant (HAP) emissions. This source is located in an attainment area for all pollutants and is a PSD major source. Transco's Compressor Station No. 170 was constructed in the early 1950s and is currently subject to the provisions of Chapter 40 of 9 VAC 5.

COMPLIANCE STATUS

The facility is inspected once a year, at a minimum. This facility was inspected on April 10, 2002, and was deemed to be in compliance to the Title V permit dated January 11, 1999. On May 15, 2003, the Department received Part 1 of Transco's application for §112(j) of the Clean Air Act. Therefore, Transco has submitted a timely and complete application under the MACT Hammer.

EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

Compressor Station No. 170 is a natural gas transmission facility (compressor station) that consists of five (5) 2-cycle, spark-ignited, lean burn, (2SLB) IC reciprocating engines, Cooper-Bessemer GMW-10 (Ref. M/L 1-5), each rated at 18.0 Million BTU/Hr (2,500 HP power output), which were installed prior to 1972; two (2) 2SLB IC reciprocating engines, Cooper-Bessemer GMWA-10 (Ref. M/L 6, 7), which were installed prior to 1972, each rated at 18.4 MM BTU/Hr (2,625 HP power output), one (1) 2SLB Cooper-Bessemer GMWC-10(Ref. M/L 8), which was installed prior to 1972, rated at 23.5 Million BTU/Hr (3,400 HP power output); two (2) 2SLB Cooper-Bessemer 10V-250 (Ref. M/L 9, 10), which were installed prior to 1972, each rated at 23.3 Million BTU/Hr (3,400 HP power output); one (1) 2SLB Cooper-Bessemer 16V-250 (Ref. M/L 11), which was installed prior to 1972, rated at 37.7 Million BTU/Hr (5,500 HP power output); and one (1) 4SLB IC Caterpillar G3306 engine-powered air compressor (Ref. A/C 1), which was installed in to 2000, rated at 1.1 Million Btu/hr (145 HP). There are no add-on air pollution control devices for any spark ignited reciprocating, internal combustion engines (SRICE).

EMISSIONS INVENTORY

Emissions are summarized in the following tables.

2002 Actual Emissions

	2002 Pollutant Emission in Tons/Year					
Emission Unit	**VOC**	**CO**	**SO_2**	**PM_{10}**	**NO_x**	**Formaldehyde**
Transco Station #170	162.7	260.6	1.7	30.5	5,351.5	76.0

Source of emissions data: 2002 CEDS Pollutant Emissions Report

EMISSION UNIT APPLICABLE REQUIREMENTS - (Ref. M/L1-M/L11, A/C 1)

Limitations

The eleven Cooper-Bessemer 2SLB engines were constructed prior to March 17, 1972, and have not been modified since, and are currently subject to the provisions of Article 4 of 9 VAC 5 Chapter 40 (9 VAC 5-40-240 et seq.). The Caterpillar 4SLB engine was constructed in 2000, and did not require a permit to construct and operate per 9 VAC 5-80-11. Therefore, Caterpillar 4SLB engine, except for the opacity provisions of 9 VAC 5-50-80, is subject to the provisions of Article 4 of 9 VAC 5 Chapter 40 (9 VAC 5-40-240 et seq.). The engines were designed to be fueled by pipeline quality natural gas, and a change in fuel may require a permit to modify and operate. The engines are subject to the SO_2 emission limit of 2.64K per 9 VAC 5-40-280 (B) and the H_2S emission limit per 9 VAC 5-40-290.

The SO_2 emission rate from each SRICE (Ref. M/L1-M/L11, A/C 1) is a function of the sulfur content of the fuel. The maximum SO_2 emissions have been established (SCC #20200252) from testing during the development of AP42, Section 3.2, Natural Gas-fired Reciprocating Engines, dated 7/00 to be 5.88×10^{-4} lb/MMBtu, based on an assumed fuel sulfur content of 2,000 gr/10^6 scf (see footnote e of AP42 Table 3.2-1 dated 7/00).

The maximum SO_2 emission rate from each SRICE (Ref. M/L1-M/L11, A/C 1) has been established to be 5.88×10^{-4} lb/MM Btu, which is in compliance with the 2.64 lb/MM Btu limit per 9 VAC 5-40-280. The permittee will keep records of malfunctions, operating procedures, maintenance schedules, and service records, and will conduct a weekly visible emission observation (see Periodic Monitoring).

The H_2S emission rate from each SRICE (Ref. M/L1-M/L11, A/C 1) is a function of the sulfur content of the fuel. The maximum H_2S emission has been calculated using the SO_2 emission factor (SCC #20200252) from AP42, Section 3.2, Natural Gas -fired Reciprocating Engines, dated 7/00, the estimated fuel consumption (18.0 MMBtu/hr) at 920 Btu/ft^3 and exhaust gas volume of a Cooper-Bessemer GMW-10 engine (Ref. M/L 1) rated at 2,500 HP power output, (22,646 acfm) to be:

$$H_2S = 5.88 \frac{\times 10^{-4} \text{ lb/MM Btu} \times 18.0 \text{ MM Btu/hr} \times 100 \times 7{,}000 \text{ gr/lb} \times (34/64)}{60 \text{ min/hr} \times 22{,}646 \text{ ft}^3_{exh}/\text{min}} = 0.00290 \text{ gr/100 ft}^3_{exh}$$

The expected H_2S emission rate from each SRICE (Ref. M/L1-M/L11, A/C 1) has been calculated to be 0.000290gr/100 ft$^3_{exh}$ which is in compliance with the 15 gr/100 ft^3 limit per 9 VAC 5-40-290. The permittee will keep records of operating procedures, maintenance schedules, and service records, and will conduct a weekly visible emission observation (see Periodic Monitoring).

Visible emissions from the Cooper-Bessemer SRICE (Ref. M/L 1-11) exhaust stacks Nos. 1-11shall not exceed twenty (20) percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceeded sixty (60) percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A) per 9 VAC 5-40-80. Visible emissions from the Caterpillar SRICE (Ref. A/C 1) exhaust stack (Ref. 15) shall not exceed twenty (20) percent opacity, except during one six-minute period in any one hour in which visible emissions shall not exceeded thirty (30) percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A) per 9 VAC 5-50-80.

Transco has submitted a Part 1 application under §112(j) of the Clean Air Act (MACT Hammer). The proposed 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT), which applies to Compressor Station No. 170, is expected to be promulgated prior to the date Transco would have to submit a Part 2 application under §112(j) of the Clean Air Act.

Periodic Monitoring

Monitoring of opacity will require the source to, at least one time per month, observe for the presence of visible emissions from each SRICE (Ref. M/L1-M/L11) exhaust stack (Ref. 01-11) when these emission units are operating. Station 170 is only staffed one shift per day (day shift), but the facility is remotely operated from Houston, Texas. The Houston dispatcher may operate each SRICE (Ref. M/L1-M/L11) at any time during the day, without prior notification of the plant personnel. The plant operator has the ability to start any of the eleven SRICE (Ref. M/L1-M/L11), but only at engine idle condition (no load). Since each SRICE (Ref. M/L1-M/L11) only combusts pipeline quality natural gas, engine idle conditions are not representative of normal operations, and no visible emissions are expected from these engines, the requirement for monthly visual observations is adequate periodic monitoring. If visible emissions are observed, the permittee will have the option to take timely corrective action to resume operations without visible emissions or perform a VEE in accordance with 40 CFR 60, Appendix A, Method 9 to assure visible emissions' compliance. The permittee will keep a log of observations, any VEE recordings and any corrective actions. If any emission unit has not operated for any period during the month, this fact shall be noted in the individual log, and the visible emission observation for the idle emission unit will not be required.

Due to its size (145 HP) and fuel (pipeline quality natural gas), the Caterpillar 4SLB engine-powered air compressor (Ref. A/C 1) does not require periodic monitoring of opacity. The source's records of fuel consumption, scheduled and unscheduled maintenance, and operator training are sufficient to demonstrate compliance to the applicable requirements.

Recordkeeping

The permit requires the Transco to maintain the following records, which include, but not limited to:

The annual throughput of fuel consumption in each SRICE (Ref. M/L1-M/L11, A/C 1), calculated monthly as the sum of each previous consecutive 12 month period.

The equations, emission factors, origin of emission factors, and all supporting documentation for criteria pollutant emissions.

Scheduled and unscheduled maintenance to each SRICE (Ref. M/L1-M/L11, A/C 1) and operator training.

Results of all stack tests, visual emissions examinations (VEE), periodic monitoring, and performance evaluations.

Copies of all notifications.

Testing

The SRICE(s) (Ref. M/L1-M/L11, A/C 1) are not subject to a PM, NOx, or CO emission standard(s) and a stack testing is not required for this facility. Furthermore, the use of natural gas in the SRICE (Ref. M/L1-M/L11, A/C 1) meets the SO_2 and H_2S emission standards per Article 4 of 9 VAC 5 Chapter 40 and a stack test for SO_2 and H_2S is not required.

Reporting

The Title V permit contains the standard testing, malfunction, and compliance reporting requirements in Section V.

Streamlined Requirements

None.

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions

B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement NO. 3-2001".

This general condition cites the sections that follow:

9 VAC 5-80-80. Application
9 VAC 5-80-140. Permit Shield
9 VAC 5-80-150. Action on Permit Applications

F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

This general condition cites the sections that follow:

9 VAC 5-40-50. Notification, Records and Reporting
9 VAC 5-50-50. Notification, Records and Reporting]

U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

This general condition cites the sections that follow:
9 VAC 5-80-110. Permit Content

Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follow:

40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.
40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.
40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

STATE ONLY APPLICABLE REQUIREMENTS
None

FUTURE APPLICABLE REQUIREMENTS

Transco Compressor Station No. 165 is a major source of hazardous air pollutants and will comply with the provisions of 40 CFR Part 63 Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT) when promulgated.

INAPPLICABLE REQUIREMENTS

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A 3 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

Compressor Station No. 170 does not process, store, or upgrade natural gas and is not subject to the provisions of Subpart HH, National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities per 40 CFR 63.760(a).

Compressor Station No. 170 does not include a glycol dehydration system or natural gas storage system. The June 29, 2001 amendment to MACT Subpart HHH states that a ‘‘compressor station that transports natural gas prior to the point of custody transfer, or to a natural gas processing plant (if present) is not considered a part of the natural gas transmission and storage source category.’’ Therefore, Compressor Station No. 170 is not subject to the provisions of Subpart HHH—National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities per § 63.1270(a).

Since there are no add-on air pollution control devices on the SRICE (Ref. M/L1-M/L11, A/C 1), Compliance Assurance Monitoring (CAM) is not required for this facility.

COMPLIANCE PLAN

None

INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

INSIGNIFICANT EMISSION UNITS

Emission Unit No.	Emission Unit Description	Citation 9 VAC	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
AUX 1, AUX 2 AUX 3	408-HP (5.5 MM Btu/hr) natural gas-powered auxiliary electric generators	5-80-720 C	N/A	< 840 HP & < 500 hr/yr
IA1	Holmar A natural gas-fired comfort heater	5-80-720 C	N/A	2.6 MM Btu/hr
IA2	Orr & Sembower 3G natural gas-fired comfort heater	5-80-720 C	N/A	5.4 MM Btu/hr
IA6	75-gallon Jacket water (JW) reclaim tank	5-80-720 B	VOC < 5 tons/yr	NA
IA7	49-gallon JW recovery tank	5-80-720 B	VOC < 5 tons/yr	NA
IA8	1,100-gallon hydraulic oil storage tank	5-80-720 B	VOC < 5 tons/yr	NA
IA9	550-gallon hydraulic oil transfer tank	5-80-720 C	N/A	< 1,000 gallon
IA10	2,055-gallon antifreeze transfer tank (ethylene glycol)	5-80-720 B	VOC < 5 tons/yr	NA
IA11	2,055-gallon antifreeze transfer tank (ethylene glycol)	5-80-720 B	VOC < 5 tons/yr	NA
IA12	6,500-gallon antifreeze transfer tank (ethylene glycol)	5-80-720 B	VOC < 5 tons/yr	NA
IA13	3,133-gallon used oil storage tank	5-80-720 C	VOC < 5 tons/yr	NA
IA14	954-gallon methanol storage tank	5-80-720 B	VOC < 5 tons/yr	NA
IA15	733 gallon-lube oil settling sump	5-80-720 C	NA	< 1,000 gallons
IA16	1,496-gallon lube oil settling sump	5-80-720 B	VOC < 5 tons/yr	NA
IA17	291-gallon diesel storage tank	5-80-720 B	VOC < 5 tons/yr	NA
IA18	11,628-gallon lube oil storage tank (installed 1950)	5-80-720 B	VOC < 5 tons/yr	NA
IA19	446-gallon lube oil day tank	5-80-720 C	NA	< 1,000 gallons
IA20, IA21, IA22,	450-gallon JW surge tanks	5-80-720 B	VOC < 5 tons/yr	NA
IA23	14,300-gallon JW surge tank (installed 1950)	5-80-720 B	VOC < 5 tons/yr	NA
IA24	2,160-gallon lube oil cooling water (LOCW) surge tanks	5-80-720 B	VOC < 5 tons/yr	NA
IA25, IA26, IA27	337-gallon lube oil cooling water surge tanks	5-80-720 B	VOC < 5 tons/yr	NA
IA28	341-gallon hydraulic oil surge tank	5-80-720 C	N/A	< 1,000 gallon
IA29, IA30	35-gallon hydraulic oil surge tanks	5-80-720 C	N/A	< 1,000 gallon
IA31	8,820-gallon wastewater storage tank	5-80-720 B	VOC < 5 tons/yr	NA
IA32	3,000-gallon NG Condensate storage tank	5-80-720 B	VOC < 5 tons/yr	NA
IA37	Parts washer	5-80-720 B	VOC < 5 tons/yr	N/A
IA38	96-gallon portable diesel storage tank	5-80-720 B	VOC < 5 tons/yr	NA
IA39	423-gallon portable NG condensate storage tank	5-80-720 B	VOC < 5 tons/yr	NA
IA40	67 gallon boiler condensate storage tank	5-80-720 B	VOC < 5 tons/yr	NA
IA41	180-gallon boiler condensate storage tank	5-80-720 B	VOC < 5 tons/yr	NA

[1]The citation criteria for insignificant activities are as follows:
9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9 VAC 5-80-720 B - Insignificant due to emission levels
9 VAC 5-80-720 C - Insignificant due to size or production rate

CONFIDENTIAL INFORMATION

The permittee has not claimed any information to be confidential.

PUBLIC PARTICIPATION

The proposed permit will be place on public notice in the Appomattox **TIMES VIRGINIAN** from October 29, 2003 to November 28, 2003. .